

4.0 ENVIRONMENTAL ANALYSIS

INTRODUCTION TO ENVIRONMENTAL ANALYSIS

This EIR contains the detailed evaluation of the impacts of the proposed Project on several coastal process- and beach-related resources and on biological resources. A brief description of the focus of each section follows.

- Section 4.1, Biological Resources: specifically, the loss of surfgrass habitat offshore of North Beach due to sand deposition.
- Section 4.2, Hydrology and Water Quality: specifically, the potential for decreased beach width at Middle Beach and South Beach resulting from the deflection of bypassed sand away from these local beaches.
- Section 4.3, Aesthetics/Visual Resources: specifically, the potential impacts related to decreased beach width south of the northern inlet.
- Section 4.4, Recreation: specifically, the impacts to surfing opportunities and use in the vicinity of the proposed Project resulting from changes in the bottom topography and waves, and the potential impacts to beach recreation opportunities and use caused by narrowing of beach widths south of the proposed Project.

IDENTIFICATION OF POTENTIAL IMPACTS THAT DO NOT MEET OR EXCEED AN ISSUE'S SIGNIFICANCE CRITERIA

In addition, evaluations were carried out that resulted in the early identification of Class III impacts (defined below as adverse impacts that do not meet or exceed an issue's significance criteria) in several potential issue areas including: (1) some aspects of biological resources; (2) agricultural resources; (3) geology and soils; (4) some aspects of hydrology and water quality; (5) hazards and hazardous materials; (6) air quality; (7) traffic and transportation; (8) noise; (9) cultural resources; (10) some aspects of aesthetics/visual resources; (11) land use and planning; (12) socioeconomic (population/housing/public services); (13) some aspects of recreation resources; (14) energy and mineral resources; and (15) environmental justice. The basis for each of these findings of Class III impact is provided in the following paragraphs.

Biological Resources

Following construction, the Project has the potential to modify beach processes and ocean currents in a manner that could cause substantial erosion and sedimentation, which in turn could cause impacts on coastal zone biological resources. This is considered in more detail in Section 4.1, Biological Resources. Other aspects of the proposed Project, including the reconstruction and the presence of an extended jetty, were determined to have Class III impacts on biological resources, as follows.

The reconstruction of the jetty would be conducted from the existing north jetty with the rock riprap transported along the jetty crest and stone placement moving seaward from the tip of the jetty. The rock would be clean of soil and debris and would provide a suitable substrate for the development of new biological communities. The area that will be permanently covered by rock was surveyed by SCUBA in October 2000. The two transects directly offshore of the north jetty indicate mixed sand and hard bottom reef habitat with reef relief ranging from 1 to 3 feet. The reefs were found to have a sand-dominated community typical of the region with coralline algal turf and encrusting invertebrates. There was no surfgrass, *Phyllospadix* spp., found in this area by either the diver surveys or the multispectral aerial survey. This habitat area would be converted into an intertidal rocky habitat with a mussel community typical of the existing jetty structures. This community would provide habitat for a variety of fish species, especially surf perches. *Phyllospadix* communities could also become established on this new habitat, as is seen on the south jetty structure. For these reasons, the impact of direct burial was determined to be a Class III impact, and no mitigation is necessary.

Reconstruction of the jetty will produce localized and short-term turbidity in the vicinity of the lagoon entrance. The rocks used in the jetty reconstruction will have only a small amount of fine-grained material that is not expected to cause widespread turbidity, and the substrate on which the rocks will be placed is primarily sand that will settle quickly after being resuspended by construction activities. This region is within the surf zone and the biological communities are adapted to episodes of turbidity generated by large waves. The short-term turbidity effects caused by construction will be well within the limits of natural turbidity events in this region. No long-term effects on turbidity would be caused by the reconstructed jetty. Turbidity effects, therefore, would be Class III impacts, and no mitigation will be necessary.

The construction of the proposed Project would involve the use of a paved parking lot for construction staging and quarry rock off-loading, and would not require clearing or ground disturbance. For these reasons, apart from the impacts related to coastal

erosion and sedimentation, discussed in Section 4.1, Biological Resources, the proposed Project would have Class III impacts upon biological resources.

Agricultural Resources

The nature and location of the Project precludes the potential for impacts to agricultural resources, including prime or unique farmland or farmland of Statewide importance. For the same reasons, there would be no conflict with existing zoning for agricultural use and Williamson Act contract lands, and no potential for farmland to be converted to non-agricultural use. For these reasons, the Project was determined to have Class III impacts (no effect) on agricultural resources, and further analysis is not necessary.

Geology and Soils

The Project involves the placement of quarry rock in the surf zone, and the long-term presence of an extended jetty on the north side of the inlet channel to Agua Hedionda Lagoon. The nature and location of the proposed Project precludes the potential to expose people or structures to substantial adverse effects related to earthquakes, seismic shaking, seismic-related ground failure, or landslides. The extended portion of the jetty could be damaged by earthquakes, seismic shaking, or seismic-related ground failure, but this is not considered a significant impact because of the small amount of construction materials affected and the absence of increased risk to people and other structures. Furthermore, the Project would not involve activities that might cause soil erosion, geological instability, problems with expansive soils, or problems related to subsurface wastewater disposal. For these reasons, the Project was determined to have Class III impacts (no effect) on geology and soils, and further evaluation is not necessary.

Hydrology and Water Quality

Following reconstruction, the Project has the potential to modify beach processes and ocean currents in a manner that could cause substantial erosion and sedimentation. This is considered in more detail in Section 4.2, Hydrology and Water Quality. Other aspects of the proposed Project, including the construction and the presence of an extended jetty, were determined to have Class III impacts, as follows.

The Project involves the placement of quarry rock in the surf zone and the long-term presence of an extended jetty on the north side of the inlet channel to Agua Hedionda Lagoon. The quarry rock would be free of substantial fine materials and would not contain pollutants. Therefore, the nature and location of the proposed Project precludes

the potential to substantially degrade water quality, violate water quality standards or waste discharge requirements, affect groundwater, increase flooding, or affect the capacity of stormwater drainage systems. Furthermore, the Project would not be located within a 100-year flood hazard area, and would not expose people or structures to flooding as a result of levee or dam failure, seiche, or mudflow. Coastal features are always at risk with respect to tsunamis. However, extending the jetty by 200 feet would not substantially increase this risk. For these reasons, and apart from erosion and sedimentation caused by changes in beach processes and ocean currents, the Project's impacts on hydrology and water quality are Class III and further evaluation is not necessary for the described impact areas.

Hazards and Hazardous Materials

The proposed Project involves placement of rocks in the Pacific Ocean and reconstructing an extension to an existing jetty in a manner identical to the existing portion. No cement or other binding materials would be used in construction and the rocks would be cleaned at the source. Limited hazardous materials may be used in construction and refueling may occur on site. Procedures for refueling would be defined and approved by the Applicant and Regional Water Quality Control Board through the NPDES and 401 Certification for the proposed Project. A NPDES Permit for Construction Activity would be obtained from State Water Resources Control Board for construction activities and all required Best Management Practices would be followed as applicable to the construction site. The Applicant will require the contractor to prepare a Waste Management Plan (WMP) that would be submitted to the Applicant and staff of the CSLC for review and approval. In the WMP, the Contractor would identify hazardous materials that would be brought onto the construction site, hazardous waste that may be generated, management of hazardous materials including wastes, disposal of wastes including manifesting process as applicable. Wastes would be transported off site to an approved disposal facility.

The reconstruction plan includes measures to prevent exposure of people or structures to a significant risk of loss, injury, or death resulting from construction operations, such as roping off 50 feet of the beach to the north and 100 feet of the ocean area extending seaward from the tip of the jetty, designated by using buoys or other floating devices during construction. A safety and emergency plan complying with all Occupational Safety & Health Administration (OSHA) requirements would be implemented at the inception of construction. For these reasons, it was determined the Project's impacts

related to Hazards and Hazardous Materials are Class III and that no further evaluation is needed.

Air Quality

The Project would involve the use of vehicles and equipment to transport quarry rock to the construction site and a crane to place the quarry rock in the surf zone. Construction-related activities would generate fugitive dust, which is measured in terms of particulate matter less than 10 microns in aerodynamic diameter (PM₁₀), from the grading of a small access ramp area (less than one acre) and travel over mostly paved surfaces. In addition, exhaust pollutants (NO_x, CO, ROG, SO₂) will be emitted from construction equipment use.

Air pollutants monitored by the San Diego Air Pollution Control District (SDAPCD) include ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and PM₁₀. Another class of air pollutants is reactive organic gases (ROG). ROG are hydrocarbons that undergo atmospheric reactions with NO₂ and other nitrogen oxides (NO_x) in the presence of sunlight to form photochemical oxidants, which are measured as the criteria pollutant O₃. No air quality permits are required for construction and the SDAPCD does not issue specific guidance for evaluating air quality impacts under the CEQA. However, the proposed Project includes measures to limit emissions and avoid impacts. These include assuring the equipment is in good working condition and is equipped with mandated emissions control devices. The measures also include measures to control fugitive dust.

The quarry rock would not contain substantial amounts of fine-grained sediments or dust. There would be no grading or clearing of land involved in the Project, and no emissions-producing equipment would be installed for use during the life of the Project. For these reasons, the Project impacts on air quality are Class III and further analysis is not necessary.

Transportation/Traffic

The nature and location of the proposed Project preclude the potential for population growth that might cause an increase in traffic, result in a change air traffic patterns, or create conflicts with plans, policies, or programs supporting alternative transportation. Furthermore, no road improvements are proposed that might increase traffic hazards or interfere with emergency access. The effects of reconstruction-related traffic were evaluated using conservative assumptions, i.e., most protective of the environment, by

Linscott, Law, & Greenspan Engineers (Appendix B). The conservative calculations assumed the reconstruction would generate 150 daily trip ends (75 in and 75 out) with 15 inbound/15 outbound trips during the AM peak hour and 15 inbound/15 outbound trips during the PM peak hour for the duration of the 3-month construction period. The actual number of truck trips is estimated by the Applicant to be no more than 20 to 30 per day. However, using the conservative numbers, the delays at signalized intersections increased only slightly, and the signalized intersection operations in the project area were calculated to continue to operate at LOS D or better during both peak hours. As such, even with about two to three times the projected level of traffic, there were no substantial effects calculated for signaled intersections in the study area. For these reasons, traffic effects were determined to be Class III and no further evaluation was determined to be necessary.

The closure of the beach parking lot for three months during the off-season was determined to have a Class III impact on parking because ample alternative parking is available during the off-season on nearby streets.

Noise

The Project would involve the use of vehicles and equipment to transport quarry rock to the construction site and a crane to place the quarry rock in the surf zone. The noise and activity associated with construction will be short-lived and not substantial, amounting to the use of diesel and gasoline powered equipment and the periodic off-loading of rock for a three-month period. These activities would occur in an area already subject to substantial vehicle traffic and human activity. The construction activities would be conducted to comply with the city of Carlsbad noise ordinances, Carlsbad Municipal Code 8.38, specifically prohibiting construction between sunset and 7 a.m. on weekdays; between sunset and 8 a.m. on weekends and holidays; and limiting the averaged noise level affecting sensitive receptors to 75 dBA Leq (decibels, A-Scale, Equivalent Sound Level). In addition, the trucks carrying rock would be required to adhere to the predetermined routes described in the Project Description to assure that residential neighborhoods are avoided. For these reasons, the Project's noise impacts were determined to be Class III and no further evaluation would be necessary.

Cultural Resources

The jetty would be reconstructed on the foundation of a jetty that was constructed in the same location during the 1950s. As such, the area has previously been disturbed. In

addition, there are no historic shipwrecks recorded within 2,000 feet of the proposed Project. For these reasons, it was determined the Project's impacts on cultural resources would be Class III and further evaluation would not be necessary.

Aesthetics/Visual Resources

Following reconstruction, the Project has the potential to reduce the width of adjacent beaches and therefore has the potential to significantly impact visual aesthetics. This is considered in more detail in Section 4.3, Aesthetics/Visual Resources. Other aspects of the proposed Project, including the reconstruction and the presence of an extended jetty, were determined to have Class III aesthetics/visual impacts, as follows.

The reconstruction of the proposed Project would involve the use of the beach parking lot as a staging area for equipment and off-loading of quarry rock. A crane would be used to place rock seaward from the terminus of the existing jetty and trucks would enter and leave the parking lot as quarry rock deliveries are made. The reconstruction would be carried out in the off-season, during daylight hours, and would last three months. The equipment, activities, and materials to be used are typical for coastal structures and beach protection. As such, residents and visitors are used to seeing cranes and rock hauling vehicles and equipment for short periods along this coastline.

The proposed Project would extend an existing jetty by 200 feet using materials that would visually blend with the existing jetty. It would be the same height and have similar proportions to the existing jetty. Therefore, it would not block scenic vistas, and because it represents the restoration of an existing use, would not substantially damage scenic resources, or substantially degrade the visual character or quality of the site or its surroundings more than the original jetty. Furthermore, no Project features are proposed that have the potential to create excessive light or glare. For these reasons, it was determined the Project's aesthetics/visual resources impacts would be Class III and that no further evaluation was necessary.

Land Use and Planning

The proposed Project would extend the length of an existing jetty, which is an allowed land use, under lease for this purpose by the State of California, and consistent with applicable land use plans and policies. There are no Federal, State, regional, or local land use plans that prohibit the reconstruction and/or maintenance of coastal protection structures such as the proposed Project. Furthermore, the nature and location of the proposed Project precludes the potential that the Project could physically divide an

established community. For these reasons, the Project's impacts on land use and planning would be Class III and no further evaluation was determined to be necessary.

Socioeconomic (Population/Housing/Public services)

The nature and location of the proposed Project preclude the potential for population or business growth in the area, either directly or indirectly. Construction staging would take place on an existing parking lot. No roads or other infrastructure would need to be extended in order to accommodate the Project. No housing would be displaced as a result of the Project. In addition, the construction period of three months is short and few construction workers are needed. Therefore, there would be no increased demand for new housing for construction workers.

The nature and location of the proposed Project preclude the potential for effects on public services. The construction would be minor and of short duration, and the long-term presence of a protective coastal structure would not result in population growth or other changes that might require expanded public services, such as fire and police protection, and new schools, parks, or other similar facilities.

The nature and location of the proposed Project preclude the potential for new demands for utilities and public service systems, including wastewater treatment facilities, storm water drainage facilities, water supplies, or landfill facilities. For these reasons, the Project was determined to have Class III impacts (no effect) on population and housing and public services, and no further evaluation was determined to be necessary.

Recreation

The proposed Project has the potential to modify beaches in a manner that could cause impacts to existing recreational uses and opportunities. This is considered in more detail in Section 4.4, Recreation Resources. Other aspects of the proposed Project were determined to have Class III impacts, as follows.

The nature and location of the proposed Project preclude the potential for population growth that might increase the use of existing recreational facilities or require the construction of new facilities. For these reasons, these were determined to be areas of Class III impact (no effect) and no further evaluation was determined to be necessary.

The closure of the beach parking lot for three months during the off-season was determined to have a Class III impact on recreation because ample alternative parking is available during the off-season on nearby streets.

Mineral Resources

The proposed Project would involve the reconstruction of a jetty on the site of a jetty constructed in the 1950s and damaged by storm-related wave action. No new lands would be disturbed or utilized for the Project. As such, the proposed Project would not result in the loss of availability of a known mineral resource that would be a value to the region or the State, nor would it result in the loss of availability of a locally-important mineral resource recovery site delineated on a local General Plan, specific plan or other land use plan. For these reasons, it was determined the Project would have Class III impacts (no effect) on mineral resources and no further evaluation is necessary.

Environmental Justice

The proposed Project could have impacts on biological resources and beach-related resources, including hydrology and water quality, aesthetics/visual resources, and recreation in the city of Carlsbad. The U.S. Bureau of Census (BOC) reports a population of 78,247 persons in the city of Carlsbad and a minority population of 10.8 percent of this total (www.census.gov, 2000 census). The BOC also reports 5.9 percent of the population of the city of Carlsbad falls below the poverty income line. Residents and visitors use the city of Carlsbad beaches. There is no evidence of disproportionate use of the beaches by low income or minority persons; therefore, potential Project impacts on the above listed areas would not fall disproportionately on such persons. Based on this information, these are Class III impacts and no further evaluation is necessary.

ASSESSMENT METHODOLOGY

Each environmental issue area analyzed further in this document provides background information and describes the environmental setting (baseline conditions) to help the reader understand the conditions that would cause an impact to occur. In addition, each section describes how an impact is determined to be “significant” or “less than significant”. Finally, the individual sections recommend mitigation measures (MMs) to reduce significant impacts. Throughout Section 4, Environmental Analysis, both impacts and the corresponding MMs are identified by a bold **letter-number designation**, e.g., Impact **BIO-1** and **MM BIO-1a**.

Environmental Baseline

The analysis of each issue area begins with an examination of the existing physical setting (baseline conditions as determined pursuant to Section 15125(a) of the State

CEQA Guidelines) that may be affected by the proposed Project. The effects of the proposed Project are defined as changes to the environmental setting that are attributable to Project components or operation.

Significance Criteria

Significance criteria are identified for each environmental issue area. The significance criteria serve as benchmarks for determining if a component action will result in a significant adverse environmental impact when evaluated against the baseline. According to the State CEQA Guidelines, Section 15382, a significant effect on the environment means "...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the Project..."

Impact Analysis

Impacts are classified as:

- **Class I** (significant adverse impact that remains significant after mitigation);
- **Class II** (significant adverse impact that can be eliminated or reduced below an issue's significance criteria);
- **Class III** (adverse impact that does not meet or exceed an issue's significance criteria); or
- **Class IV** (beneficial impact).

A determination will be made, based on the analysis of any impact within each affected environmental issue area and compliance with any recommended mitigation measure(s), of the level of impact remaining in comparison to the pertinent significance criteria. If the impact remains significant, at or above the significance criteria, it is deemed to be Class I. If a "significant adverse impact" is reduced, based on compliance with mitigation, to a level below the pertinent significance criteria, it is determined to no longer have a significant effect on the environment, i.e., to be "less than significant" (Class II). If an action creates an adverse impact above the baseline condition, but such impact does not meet or exceed the pertinent significance criteria, it is determined to be adverse, but less than significant (Class III). An action that provides an improvement to an environmental issue area in comparison to the baseline information is recognized as a beneficial impact (Class IV).

Formulation of Mitigation Measures and Mitigation Monitoring Program

When significant impacts are identified, feasible mitigation measures are formulated to eliminate or reduce the intensity of the impacts and focus on the protection of sensitive

resources. The effectiveness of a mitigation measure is subsequently determined by evaluating the impact remaining after its application. Those impacts meeting or exceeding the impact significance criteria after mitigation are considered residual impacts that remain significant (Class I). Implementation of more than one mitigation measure may be needed to reduce an impact below a level of significance. The mitigation measures recommended in this document are identified in the impact sections and presented in a MMP. The MMP is provided in Section 6.0, Mitigation Monitoring Program.

If any mitigation measures become incorporated as part of a Project's design, they are no longer considered mitigation measures under the CEQA. If they eliminate or reduce a potentially significant impact to a level below the significance criteria, they eliminate the potential for that significant impact since the "measure" is now a component of the action. Such measures incorporated into the Project design have the same status as any "applicant proposed measures." The CSLC's practice is to include all measures to eliminate or reduce the environmental impacts of a proposed Project, whether applicant proposed or recommended mitigation, in the MMP.

Impacts of Alternatives

Section 3, Alternatives, provides a list, description, and map that identify alternatives to the proposed Project. Each issue area in Section 4 presents the impact analysis for each alternative scenario. A summary of the collective impacts of each alternative in comparison with the impacts of the proposed Project is included within the Executive Summary Section.

Cumulative Projects Impact Analysis

Each issue area in Section 4 presents the cumulative impact scenario, the focus of which is to identify the potential impacts of the Project that might not be significant when considered alone, but that might contribute to a significant impact when viewed in conjunction with the other identified projects.

CUMULATIVE RELATED FUTURE PROJECTS

This discussion provides a listing and map identifying other related future projects near the location of the proposed Project and Alternatives.

Section 15130 of the State CEQA Guidelines requires that an EIR discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable,

as defined in Section 15065(c). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. As defined in Section 15355 of the State CEQA Guidelines, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.